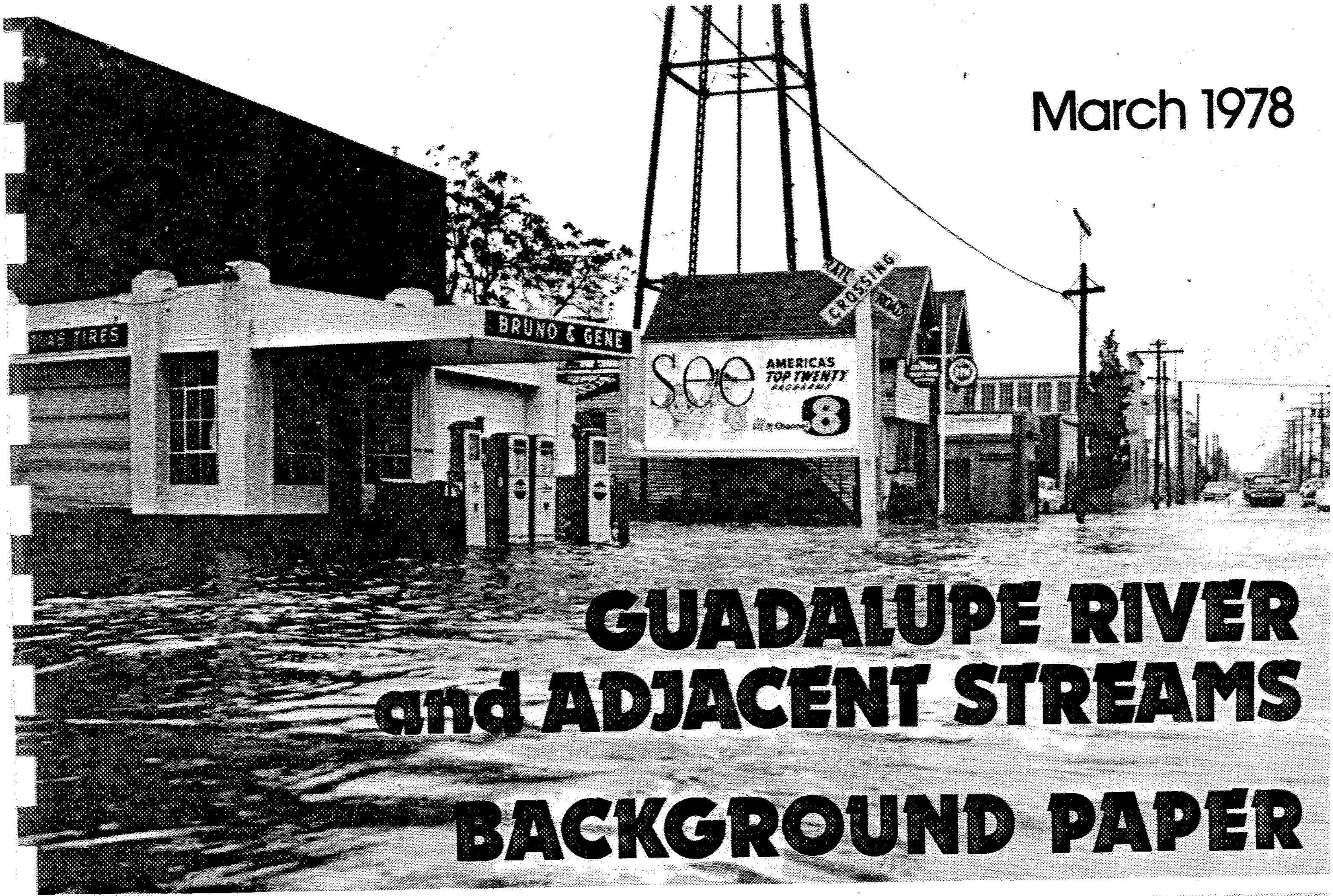
March 1978



GUADALUPE RIVER and ADJACENT STREAMS

BACKGROUND PAPER

TC
425
G8.G8
1978b

Santa Clara Valley Water District

SANTA CLARA VALLEY
ER DISTRICT
Almaden Expressway
Jose, California 95118

PROPERTY OF SANTA CLARA VALLEY
WATER DISTRICT
5750 Almaden Expressway
San Jose, California 95118

1.5.312

Cover Page Photos:

TOP: 1955 Flood at Julian Street, San Jose

BOTTOM: 1963 Flood in Alviso

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INTRODUCTION

This background paper has been prepared to serve as a focus for the discussions which will take place between the Water District and the Corps of Engineers at the meeting of March 8, 1978. The purpose of this meeting is to review the status of the Corps' study of the Guadalupe River and Adjacent Streams, to reassert the importance of this project to the local community, and to discuss the need to accelerate the study.

The Guadalupe River and Adjacent Streams investigation was authorized by Congress for study in 1945. Following several preliminary studies for various portions of the study area, the Corps, in 1963, started its detailed study of the Guadalupe River. In 1968, the Corps concluded that the benefits were not sufficient to justify a federal project and therefore the study should be suspended until conditions in the floodplain warranted a reanalysis. In 1971, the community asked the Corps to reactivate the study for two reasons: (1) the City of San Jose was starting a "Model Cities" program in the downtown area, and (2) a more in-depth analysis of flood damages appeared warranted. Based on this request and the Corps' subsequent findings, the study was reactivated in March, 1972.

The investigation is presently in Stage 2 of the Corps' three-stage planning process. Stage 1, the Plan of Study, was completed in 1973. In 1974, the initial problem definition and alternative screenings were completed. The second phase of Stage 2, the more detailed problem definition and alternative designs, has been completed for the Guadalupe River portion, is under way for the Coyote Creek portion, and is starting for the

Baylands portion, It is presently anticipated that Stage 2 will be completed in late 1978. Stage 3, the evaluation and impact analyses, is expected to be completed in 1980. Given these anticipated completion dates, it is unlikely that construction could begin before 1985. Figure 1 summarizes the General Study Sequence for this project.

FLOOD PROBLEMS

The Guadalupe River and Coyote Creek have produced significant flood damages historically and have the potential to produce catastrophic damages at any time.

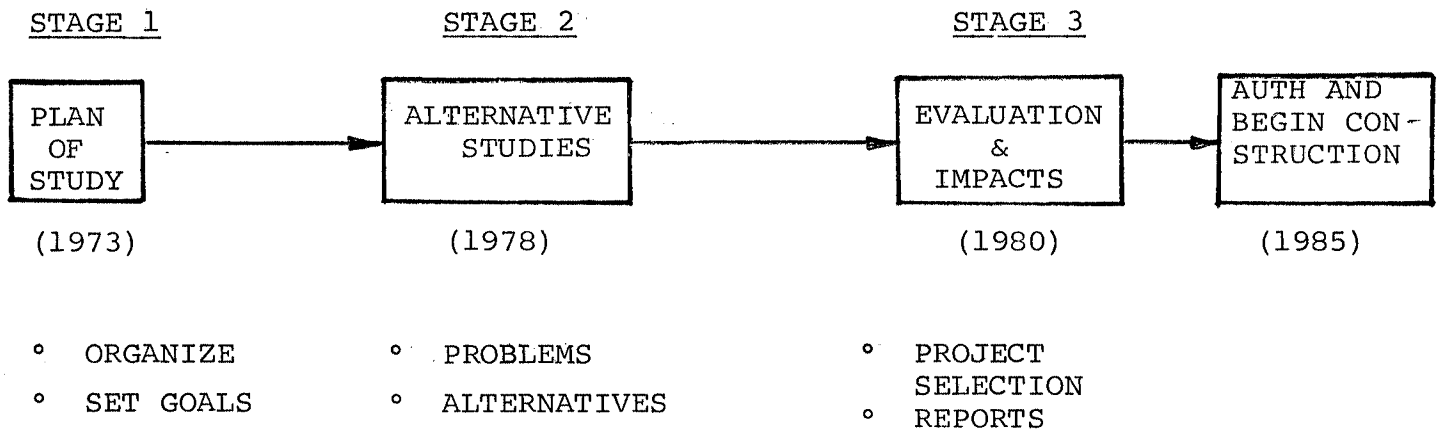
Historically, these streams have flooded the downtown San Jose and Alviso areas very frequently. The largest floods occurred in 1862, 1895, 1911, 1917, 1955, 1958, 1963, and 1969. Many smaller floods have occurred in the Alviso area on a more frequent basis. Recent improvements along the Guadalupe River have reduced the frequency of flooding in these areas.

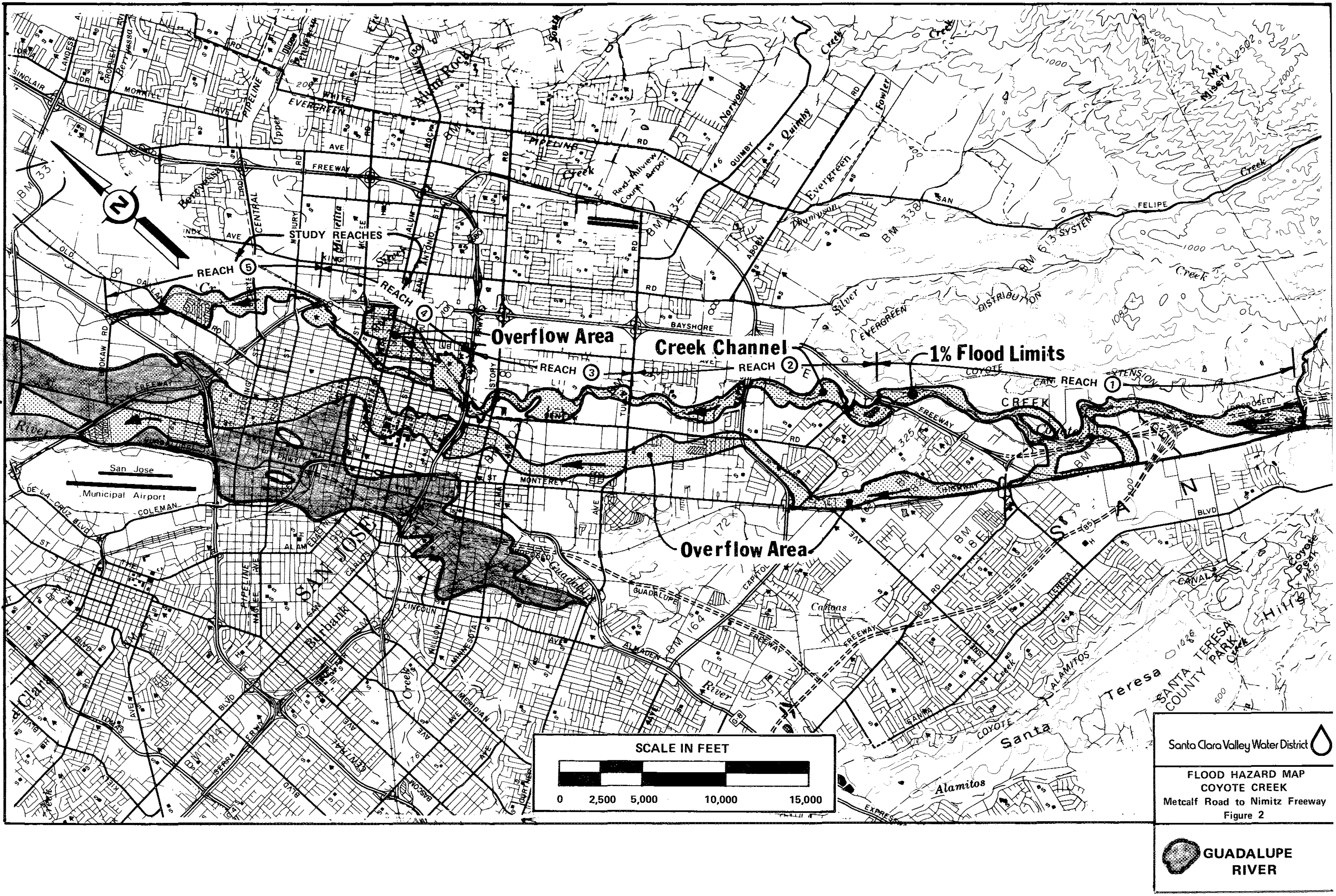
The potential for flood damages from these creeks is enormous. The attached Figure 2 shows the limits of potential flooding. Table 1 summarizes the damages which would occur during a 1% flood on these streams. Total damages to the approximately 10,800 acres of developed land in the floodplain would be $122,000,000 under existing conditions. Although exact damage figures are not available for the more frequent floods, it is roughly estimated that a 25-year flood would cause about $40,000,000 worth of damage under existing conditions.

The majority of the 1% flood damages would be incurred by public facilities ($29,000,000) and commercial and industrial developments ($58,000,000). Table 2 presents a list of the major public and commercial-industrial complexes impacted by the 1% flood.

FIGURE 1. GUADALUPE RIVER AND ADJACENT STREAMS

GENERAL STUDY SEQUENCE





Santa Clara Valley Water District

FLOOD HAZARD MAP
COYOTE CREEK
Metcalf Road to Nimitz Freeway
Figure 2

TABLE 1

GUADALUPE RIVER & ADJACENT STREAMS

FLOOD DAMAGES - 1% FLOOD

Damage Category

Study Area	Residential Area (Ac)	Residential Damages (Millions $)	Public Area (Ac)	Public Damages (Millions $)	Commercial/Industrial Area (Ac)	Commercial/Industrial Damages (Millions $)	Total Area (Ac)	Total Damages (Millions $)
Guadalupe River[1]	1,300	19	300	15	800	50	2,400	84
Coyote Creek[2]	1,600	14	300	5	600	3	2,500	22
Baylands[2]	200	2	4,800	9	900	5	5,900	16
	3,100	35	5,400	29	2,300	58	10,800	122

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[1] From Guadalupe River Information Brochure, September, 1976.

[2] From Report entitled "Potential Flood Damages on Guadalupe River, Coyote Creek, and Adjacent Streams", April, 1974, by Andrew H. Trice, Ph.d.

TABLE 2

GUADALUPE RIVER AND ADJACENT STREAMS

MAJOR FACILITIES IN THE 1% FLOODPLAIN

Fremont Airport
San Francisco Bay Wildlife Refuge
Alviso Yacht Club Clubhouse (Historic significance)
Agnew State Hospital (East area)
Rincon de los Esteros Redevelopment Project Area
County Civic Center
Sheriff's Office
City of San Jose Civic Center
San Jose Police Department
Park Center Redevelopment Project Area
Julian-Stockton Redevelopment Project Area
Park of the Guadalupe Project Area
San Jose Center for the Performing Arts
San Jose State University
Spartan Stadium
Olinder Community Center
Japanese Friendship Gardens Center
Kelley Park Zoo
Santa Clara County Fairgrounds
South Seventh Street Industrial Complex
Hellyer Park
15 Elementary and Junior High Schools

PREVIOUS DISTRICT ASSISTANCE

The Water District is keenly aware of the need for the completion of this study and the installation of a flood control project. In an effort to accelerate this study, the Water District has provided a sustantial amount of political, technical, and financial assistance since 1972.

Table 3 summarizes the principal contribution provided by the Water District. During the course of this study, the local taxpayers, through the Water District, have provided about $300,000 worth of assistance.

NEED TO ACCELERATE STUDY

It is clear from the brief discussions in this paper that there is a potential for a catastrophic disaster in Santa Clara County due to flooding from the Guadalupe River and Coyote Creek. Furthermore, it appears that a flood control system to prevent this disaster is still eight years away from authorization and beginning of construction, and much further away from construction completion. With these two conditions existing, it is imperative that every effort be made to accelerate the present study.

There are three specific factors which justify an accelerated study program. These factors are (1) the very high flood risk and potential damages, (2) the impacts of inflation, and (3) the beneficial aspects of assisting local communities to develop sound economic bases, in this case through urban redevelopment projects in the City of San Jose.

The probability of a large flood occurring before construction of this project is quite high. A 25-year flood has a 40 percent chance of occurring during a 10-year period; a 100-year flood

TABLE 3

GUADALUPE RIVER AND ADJACENT STREAMS

SUMMARY OF DISTRICT ASSISTANCE

April, 1972	Citizens Advisory Committee formed.
April, 1974	Report on potential flood damages by Dr. Trice.
July, 1975-April, 1976	Alternative studies for the Guadalupe River portion.
August, 1975	Aerial mapping of Coyote Creek near Tennant Road.
September-October, 1975	Hired archaeological consultant to survey the Guadalupe River portion.
September-October, 1975	Hired biological consultant to inventory the Guadalupe River portion.
September-October, 1975	Community workshops for the Guadalupe River portion.
August, 1976	Information Brochure for the Guadalupe River portion.
November, 1976-April, 1977	Reach IX meetings and supplemental engineering work.
June, 1977-March, 1978	Hired engineering consultant for the alternative studies for the Coyote Creek portion.
June-October, 1977	Hired biological consultant to inventory the Coyote Creek portion.
June, 1977-February, 1978	Hired archaeological consultant to survey the Coyote Creek portion.
January, 1978	Community workshops for the Coyote Creek portion.
February, 1978	Hired engineering consultant to analyze two alternatives in the Baylands portion.

has about a 10 percent chance of occurring during this same period. Clearly then, there is a very good chance that a flood producing about $40,000,000 worth of damages will occur before project construction is complete.

The impact of inflation on construction costs is very significant for large projects. Given an annual construction inflation rate of approximately 10% and a rough construction cost of $60,000,000 in today's dollars, it can be seen that each year of delay adds about $6,000,000 to the project cost. This figure alone clearly indicates the desirability of the expenditure of funds at an accelerated pace.

Two major urban redevelopment projects are located in the floodplain of the Guadalupe River and Coyote Creek. In the Baylands area, the Rincon de los Esteros Redevelopment project is being actively developed. In the downtown industrial area, the Julian-Stockton Industrial Redevelopment Project is being planned. These two projects are severely impacted by the potential flooding from the Guadalupe River and Coyote Creek. In both cases, either development of desirable industrial facilities is being prevented or the cost of these facilities must be increased to provide for interim flood protection, such as local filling. This is an ineffective use of funds as such activities do not provide protection for existing facilities as a flood protection project would.